on a Substrate", naming Klaus F. Schuegraf as inventor, and which is now U.S. Patent No. 5,849,644 the disclosure of which is incorporated by reference.--

In the Claims

Cancel claims 1-38 without prejudice.

New Claims

Add new claims 39-48 as follows:

39. A semiconductor processing method of depositing SiO_2 on a substrate within a chemical vapor deposition reactor comprising feeding at least one of H_2O and H_2O_2 into the reactor while feeding an organic silicon precursor, wherein the at least one of H_2O and H_2O_2 is fed into the reactor separately from the organic silicon precursor, and under conditions which are effective to reduce the decomposition rate of the organic silicon precursor.

40. The semiconductor processing method of claim 39, wherein the at least one of H_2O and H_2O_2 comprises less than about 50% by volume of material injected into the reactor.

41. The semiconductor processing method of claim 40, wherein the at least one of H_2O and H_2O_2 comprises between about 5% to 15% by volume of material injected into the reactor.

42. The semiconductor processing method of claim 40, wherein the at least one of H_2O and H_2O_2 comprises less than about 5% by volume of material injected into the reactor.

43. A semiconductor processing method of forming silicon dioxide comprising feeding at least one of H_2O and H_2O_2 into a chemical vapor deposition reactor with an organic silicon precursor under conditions effective to decompose the organic silicon precursor, at a reduced rate, into silicon dioxide and reduce formation of undesired reaction intermediates in the reactor during the decomposition reaction, wherein the at least one of H_2O and H_2O_2 is fed into the reactor separately from the organic silicon precursor, said organic silicon precursor being the only silicon containing precursor which is fed into the reactor to form said silicon dioxide.

44. The semiconductor processing method of claim 43, wherein the organic silicon precursor is selected from the group consisting of: ~~silane,~~ tetraethoxysilane (TEOS), diethylsilane (DES), tetramethylcyclotetrasiloxane (TMCTS), fluorotriethoxysilane (FTES), and fluorotrialkoxysilane (FTAS).

45. The semiconductor processing method of claim 43, wherein the chemical vapor deposition reactor is a hot wall reactor.

46. The semiconductor processing method of claim 43, wherein the chemical vapor deposition reactor is a cold ~~hot~~ wall reactor.

47. A semiconductor processing method of chemical vapor depositing SiO_2 on a substrate comprising:

placing a substrate within a chemical vapor deposition reactor;

feeding an organic silicon precursor into the chemical vapor deposition reactor having the substrate positioned therein under conditions effective to decompose the precursor into SiO_2 which deposits on the substrate and into a gaseous oxide of hydrogen; and

feeding an additional quantity of the gaseous oxide of hydrogen into the reactor while feeding the organic silicon precursor into the reactor, wherein the organic silicon precursor and the additional quantity of the gaseous oxide of hydrogen are fed into the reactor from separate feed streams and under conditions which are effective to reduce the decomposition rate of the organic silicon precursor into the SiO_2.

48. A semiconductor processing method of chemical vapor depositing SiO_2 on a substrate comprising:

placing a substrate within a hot wall low pressure chemical vapor deposition reactor;

feeding an organic silicon precursor into the hot wall chemical vapor deposition reactor having the substrate positioned therein under conditions effective to decompose the precursor into SiO_2 which deposits on the substrate and into a gaseous oxide of hydrogen; and

feeding an additional quantity of the gaseous oxide of hydrogen into the hot wall low pressure chemical vapor deposition reactor while feeding the organic silicon precursor into the reactor, wherein the organic silicon precursor and the additional quantity of the gaseous oxide of hydrogen are fed into the reactor from separate feed streams.